

Title (en)

Resizing a digital document image via background content removal

Title (de)

Anpassung der Größe eines digitalen Dokumentbildes mittels Entfernung des Hintergrundinhalts

Title (fr)

Redimensionnement d'une image de document numérique via une suppression de contenu d'arrière-plan

Publication

EP 2219153 A3 20110223 (EN)

Application

EP 10152480 A 20100203

Priority

US 36979009 A 20090212

Abstract (en)

[origin: EP2219153A2] What is disclosed is a system and method for performing a background deletion that exploits both local and global context to remove background and other white space between objects with the aim of retaining structural relationships between objects in the document. A document image is received (102) and seams are carved (104) through the image. Seams composed of uniform background pixels are identified (106). Adjacent seams containing background pixels are collected (108) into groups of seams. The background seam groups are classified according to their widths. A target number of seams to be removed for each background seam group is then determined (110) based on the classification. Seam groups which are wider will have at least the same or a greater target number of seams to be deleted therefrom than will seam groups of narrower widths. The document image is then resized (112) by deleting seams from the seam groups based on the assigned target number.

IPC 8 full level

G06T 3/00 (2006.01)

CPC (source: EP US)

G06T 3/04 (2024.01 - EP US)

Citation (search report)

- [A] EP 1968008 A2 20080910 - MITSUBISHI ELECTRIC CORP [JP]
- [A] US 2006072853 A1 20060406 - CLARKE IAN [CA], et al
- [A] EP 1026630 A2 20000809 - SHARP KK [JP]
- [A] WO 9615510 A1 19960523 - WANG LABORATORIES [US]
- [XY] A. SHAMIR AND S. AVIDAN: "Seam Carving for Media Retargeting", COMMUNICATIONS OF THE ACM ACM USA, vol. 52, no. 1, January 2009 (2009-01-01) - January 2009 (2009-01-01), pages 77 - 85, XP002614986
- [Y] O'GORMAN LAWRENCE ET AL: "Adaptive and Outline-Based Subsampling of Images Containing Text and Binary Graphics", INTERNET CITATION, 1996, XP002198448, Retrieved from the Internet <URL:http://www.cs.bell-labs.com/cm/cs/doc/96/4-14.ps.gz> [retrieved on 20020508]
- [A] S. KOPF ET AL.: "Adaptation of WEB Pages and Images for Mobile Applications", MULTIMEDIA ON MOBILE DEVICES 2009, SAN JOSE, CA, USA, vol. 7256, 20 January 2009 (2009-01-20) - 20 January 2009 (2009-01-20), pages 72560C_1 - 72560C_12, XP002614987

Cited by

WO2013014290A1; EP2948919A4; FR2978579A1; WO2014116346A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

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DOCDB simple family (application)

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